

Claims

1. A method of managing the state of a computer network comprising fault-tolerant network nodes, comprising:
 - determining the state of a first link between fault-tolerant nodes and other network nodes;
 - determining the state of a second link between fault-tolerant nodes and other network nodes;
 - receiving data from an originating node in a first fault-tolerant intermediate node; and
 - selecting either the first link or the second link from the first fault-tolerant intermediate node to a destination node for sending data, such that the link is selected based on the network states determined independently for each fault-tolerant node.
2. The method of claim 1, wherein the destination node is a fault-tolerant intermediate node.
3. The method of claim 1, wherein the originating node is a non-fault tolerant node.
4. The method of claim 1, wherein the first fault-tolerant intermediate node is a switch.
5. The method of claim 1, further comprising building an independent network status table in each fault-tolerant node that indicates results of determining the state of the first and second link between that node and other network nodes.
6. The method of claim 5, wherein the network status table comprises data representing network status based on data received at a fault-tolerant network node from other network nodes.
7. The method of claim 6, wherein the data received at a fault-tolerant network node from other networked nodes comprises a diagnostic message.

8. The method of claim 6, wherein data received at a fault-tolerant network node from other networked nodes comprises data representing the ability of the other fault-tolerant nodes to receive data from other different network nodes.

9. The method of claim 5, wherein the network status table comprises data representing network status based on a fault-tolerant node's ability to send data to other nodes.

10. The method of claim 6, wherein the network status table further comprises data representing network status based on a fault-tolerant node's ability to send data to other nodes.

11. The method of claim 1, wherein determining the state of a first and second link from fault-tolerant nodes comprises determining whether each node connected to a fault-tolerant node can send data to the fault-tolerant node and can receive data from the fault-tolerant node over each of the first and second links.

12. A fault-tolerant computer network interface, the interface operable to:

- determine the state of a first link between the interface and other network nodes;
- determine the state of a second link between the interface and other network nodes;
- receive data from an originating node; and
- select either the first link or the second link from the interface to a destination node for sending data, such that the link is selected based on the determined state of each link.

13. The fault-tolerant computer network interface of claim 12, wherein the destination node is a fault-tolerant intermediate node.

14. The fault-tolerant computer network interface of claim 12, wherein the originating node is a non-fault tolerant node.

15. The fault-tolerant computer network interface of claim 12, wherein the computer network interface comprises part of a switch.
16. The fault-tolerant computer network interface of claim 12, the interface further operable to build a network status table that indicates results of determining the state of the first and second link between the interface and other network nodes.
17. The fault-tolerant computer network interface of claim 16, wherein the network status table comprises data representing network status based on data received at the interface from other network nodes.
18. The fault-tolerant computer network interface of claim 17, wherein the data received at the interface from other networked nodes comprises a diagnostic message.
19. The fault-tolerant computer network interface of claim 17, wherein the data received at the interface from other network nodes comprises data representing the ability of the other fault-tolerant nodes to receive data from other different network nodes.
20. The fault-tolerant computer network interface of claim 16, wherein the network status table comprises data representing network status based on the interface's ability to send data to other nodes.
21. The fault-tolerant computer network interface of claim 17, wherein the network status table further comprises data representing network status based on the interface's ability to send data to other nodes.
22. The fault-tolerant computer network interface of claim 12, wherein determining the state of a first and second link from the interface comprises determining whether each node connected to the interface can send data to the interface and can receive data from

the interface over each of the first and second links.

23. A machine-readable medium with instructions thereon, the instructions when executed operable to cause a computerized system operating as a fault-tolerant node in a network to:

determine the state of a first link between the computerized system and other network nodes;

determine the state of a second link between the computerized system and other network nodes;

receive data from an originating node; and

select either the first link or the second link from the computerized system to a destination node for sending data, such that the link is selected based on the determined state of each link.

24. The machine-readable medium of claim 23, wherein the destination node is a fault-tolerant intermediate node.

25. The machine-readable medium of claim 23, wherein the originating node is a non-fault tolerant node.

26. The machine-readable medium of claim 23, wherein the computerized system is a switch.

27. The machine-readable medium of claim 23, the instructions when executed further operable to cause the computerized system to build a network status table that indicates results of determining the state of the first and second link between the computerized system and other network nodes.

28. The machine-readable medium of claim 27, wherein the network status table comprises data representing network status based on data received at the computerized

system from other network nodes.

29. The machine-readable medium of claim 28, wherein the data received at the computerized system from other networked nodes comprises a diagnostic message.
30. The machine-readable medium of claim 28, wherein the data received at the computerized system from other network nodes comprises data representing the ability of the other fault-tolerant nodes to receive data from other different network nodes.
31. The machine-readable medium of claim 27, wherein the network status table comprises data representing network status based on the computerized system's ability to send data to other nodes.
32. The machine-readable medium of claim 28, wherein the network status table further comprises data representing network status based on the computerized system's ability to send data to other nodes.
33. The machine-readable medium of claim 23, wherein determining the state of a first and second link from the computerized system comprises determining whether each node connected to the computerized system can send data to the system and can receive data from the system over each of the first and second links.